

SEQUENCE LISTING

<110> Emory University
 Ensslin, Michael A.
 Shur, Barry A.

<120> METHODS AND COMPOSITIONS FOR MODULATING GAMETE ADHESION

<130> 50508-2390

<150> US 60/512,174

<151> 2003-10-17

<160> 9

<170> PatentIn version 3.3

<210> 1

<211> 1281

<212> DNA

<213> Mus musculus

<400> 1

```

60 atgcaggtct cccgtgtgct ggccgcgctg tgcggcatgc tactctgcgc ctctggcctc
120 ttcgccgcgt ctggtgactt ctgtgactcc agcctgtgcc tgaacgggtgg cacctgcttg
180 acggggccaag acaatgacat ctactgcctc tgccctgaag gcttcacagg ccttgtgtgc
240 aatgagactg agagaggacc atgctcccca aacccttgct acaatgatgc caaatgtctg
300 gtgacttttg acacacagcg tggggacatc ttcaccgaat acatctgcca gtgccctgtg
360 ggctactcgg gcatccactg tgaaaccggt tgttctacac agctgggcat ggaagggggc
420 gccattgctg attcacagat ttccgcctcg tctgtgtata tgggtttcat gggcttgacg
480 cgctggggcc cggagctggc tcgtctgtac cgcacaggga tcgtcaatgc ctggacagcc
540 agcaactatg atagcaagcc ctggatccag gtgaaccttc tgcggaagat gcgggtatca
600 ggtgtgatga cgcagggtgc cagccgtgcc gggagggcgg agtacctgaa gaccttcaag
660 gtggcttaca gcctcgacgg acgcaagttt gagttcatcc aggatgaaag cggaggagac
720 aaggagtttt tgggtaacct ggacaacaac agcctgaagg ttaacatggt caaccgact
780 ctggaggcac agtacataag gctgtaccct gtttcgtgcc accgcggctg caccctccgc

```

840 ttcgagctcc tgggctgtga gttgcacgga tggtctgagc cctgggcct gaagaataac
 900 acaattcctg acagccagat gtcagcctcc agcagctaca agacatggaa cctgcgtgct
 960 tttggctggc acccccactt gggaaggctg gataatcagg gcaagatcaa tgcctggacg
 1020 gctcagagca acagtgccaa ggaatggctg cagggtgacc tgggcactca gaggcaagtg
 1080 acaggaatca tcaccaggg ggcccgtagc tttggccaca tccagtatgt ggcgtcctac
 1140 aaggtagccc acagtgatga tgggtgtgag tggactgtat atgaggagca aggaagcagc
 1200 aaggtcttcc agggcaactt ggacaacaac tcccacaaga agaacatctt cgagaaaccc
 1260 ttcattggctc gctacgtgag tgccttcca gtgtcctggc ataaccgcat caccctgagc
 1281 ctggagctgc tgggctgtta a

<210> 2
 <211> 426
 <212> PRT
 <213> mus musculus

<400> 2

Met Gln Val Ser Arg Val Leu Ala Ala Leu Cys Gly Met Leu Leu Cys
 1 5 10 15

Ala Ser Gly Leu Phe Ala Ala Ser Gly Asp Phe Cys Asp Ser Ser Leu
 20 25 30

Cys Leu Asn Gly Gly Thr Cys Leu Thr Gly Gln Asp Asn Asp Ile Tyr
 35 40 45

Cys Leu Cys Pro Glu Gly Phe Thr Gly Leu Val Cys Asn Glu Thr Glu
 50 55 60

Arg Gly Pro Cys Ser Pro Asn Pro Cys Tyr Asn Asp Ala Lys Cys Leu
 65 70 75 80

Val Thr Leu Asp Thr Gln Arg Gly Asp Ile Phe Thr Glu Tyr Ile Cys
 85 90 95

Gln Cys Pro Val Gly Tyr Ser Gly Ile His Cys Glu Thr Gly Cys Ser

100	105	110
Thr Gln Leu Gly Met Glu Gly Gly Ala Ile Ala Asp Ser Gln Ile Ser 115	120	125
Ala Ser Ser Val Tyr Met Gly Phe Met Gly Leu Gln Arg Trp Gly Pro 130	135	140
Glu Leu Ala Arg Leu Tyr Arg Thr Gly Ile Val Asn Ala Trp Thr Ala 145	150	155 160
Ser Asn Tyr Asp Ser Lys Pro Trp Ile Gln Val Asn Leu Leu Arg Lys 165	170	175
Met Arg Val Ser Gly Val Met Thr Gln Gly Ala Ser Arg Ala Gly Arg 180	185	190
Ala Glu Tyr Leu Lys Thr Phe Lys Val Ala Tyr Ser Leu Asp Gly Arg 195	200	205
Lys Phe Glu Phe Ile Gln Asp Glu Ser Gly Gly Asp Lys Glu Phe Leu 210	215	220
Gly Asn Leu Asp Asn Asn Ser Leu Lys Val Asn Met Phe Asn Pro Thr 225	230	235 240
Leu Glu Ala Gln Tyr Ile Arg Leu Tyr Pro Val Ser Cys His Arg Gly 245	250	255
Cys Thr Leu Arg Phe Glu Leu Leu Gly Cys Glu Leu His Gly Cys Ser 260	265	270
Glu Pro Leu Gly Leu Lys Asn Asn Thr Ile Pro Asp Ser Gln Met Ser 275	280	285
Ala Ser Ser Ser Tyr Lys Thr Trp Asn Leu Arg Ala Phe Gly Trp Tyr 290	295	300
Pro His Leu Gly Arg Leu Asp Asn Gln Gly Lys Ile Asn Ala Trp Thr 305	310	315 320
Ala Gln Ser Asn Ser Ala Lys Glu Trp Leu Gln Val Asp Leu Gly Thr 325	330	335
Gln Arg Gln Val Thr Gly Ile Ile Thr Gln Gly Ala Arg Asp Phe Gly 340	345	350

His Ile Gln Tyr Val Ala Ser Tyr Lys Val Ala His Ser Asp Asp Gly
 355 360 365

Val Gln Trp Thr Val Tyr Glu Glu Gln Gly Ser Ser Lys Val Phe Gln
 370 375 380

Gly Asn Leu Asp Asn Asn Ser His Lys Lys Asn Ile Phe Glu Lys Pro
 385 390 395 400

Phe Met Ala Arg Tyr Val Arg Val Leu Pro Val Ser Trp His Asn Arg
 405 410 415

Ile Thr Leu Arg Leu Glu Leu Leu Gly Cys
 420 425

<210> 3
 <211> 404
 <212> PRT
 <213> mus musculus

<400> 3

Ala Ser Gly Asp Phe Cys Asp Ser Ser Leu Cys Leu Asn Gly Gly Thr
 1 5 10 15

Cys Leu Thr Gly Gln Asp Asn Asp Ile Tyr Cys Leu Cys Pro Glu Gly
 20 25 30

Phe Thr Gly Leu Val Cys Asn Glu Thr Glu Arg Gly Pro Cys Ser Pro
 35 40 45

Asn Pro Cys Tyr Asn Asp Ala Lys Cys Leu Val Thr Leu Asp Thr Gln
 50 55 60

Arg Gly Asp Ile Phe Thr Glu Tyr Ile Cys Gln Cys Pro Val Gly Tyr
 65 70 75 80

Ser Gly Ile His Cys Glu Thr Gly Cys Ser Thr Gln Leu Gly Met Glu
 85 90 95

Gly Gly Ala Ile Ala Asp Ser Gln Ile Ser Ala Ser Ser Val Tyr Met
 100 105 110

Gly Phe Met Gly Leu Gln Arg Trp Gly Pro Glu Leu Ala Arg Leu Tyr
 115 120 125

Arg Thr Gly Ile Val Asn Ala Trp Thr Ala Ser Asn Tyr Asp Ser Lys
 130 135 140

Pro Trp Ile Gln Val Asn Leu Leu Arg Lys Met Arg Val Ser Gly Val
 145 150 155 160

Met Thr Gln Gly Ala Ser Arg Ala Gly Arg Ala Glu Tyr Leu Lys Thr
 165 170 175

Phe Lys Val Ala Tyr Ser Leu Asp Gly Arg Lys Phe Glu Phe Ile Gln
 180 185 190

Asp Glu Ser Gly Gly Asp Lys Glu Phe Leu Gly Asn Leu Asp Asn Asn
 195 200 205

Ser Leu Lys Val Asn Met Phe Asn Pro Thr Leu Glu Ala Gln Tyr Ile
 210 215 220

Arg Leu Tyr Pro Val Ser Cys His Arg Gly Cys Thr Leu Arg Phe Glu
 225 230 235 240

Leu Leu Gly Cys Glu Leu His Gly Cys Ser Glu Pro Leu Gly Leu Lys
 245 250 255

Asn Asn Thr Ile Pro Asp Ser Gln Met Ser Ala Ser Ser Ser Tyr Lys
 260 265 270

Thr Trp Asn Leu Arg Ala Phe Gly Trp Tyr Pro His Leu Gly Arg Leu
 275 280 285

Asp Asn Gln Gly Lys Ile Asn Ala Trp Thr Ala Gln Ser Asn Ser Ala
 290 295 300

Lys Glu Trp Leu Gln Val Asp Leu Gly Thr Gln Arg Gln Val Thr Gly
 305 310 315 320

Ile Ile Thr Gln Gly Ala Arg Asp Phe Gly His Ile Gln Tyr Val Ala
 325 330 335

Ser Tyr Lys Val Ala His Ser Asp Asp Gly Val Gln Trp Thr Val Tyr
 340 345 350

Glu Glu Gln Gly Ser Ser Lys Val Phe Gln Gly Asn Leu Asp Asn Asn
 355 360 365

Ser His Lys Lys Asn Ile Phe Glu Lys Pro Phe Met Ala Arg Tyr Val

370 375 380
 Arg Val Leu Pro Val Ser Trp His Asn Arg Ile Thr Leu Arg Leu Glu
 385 390 395 400
 Leu Leu Gly Cys
 <210> 4
 <211> 244
 <212> PRT
 <213> artificial
 <220>
 <223> EEC - recombinant protein
 <400> 4
 Ala Ser Gly Asp Phe Cys Asp Ser Ser Leu Cys Leu Asn Gly Gly Thr
 1 5 10 15
 Cys Leu Thr Gly Gln Asp Asn Asp Ile Tyr Cys Leu Cys Pro Glu Gly
 20 25 30
 Phe Thr Gly Leu Val Cys Asn Glu Thr Glu Arg Gly Pro Cys Ser Pro
 35 40 45
 Asn Pro Cys Tyr Asn Asp Ala Lys Cys Leu Val Thr Leu Asp Thr Gln
 50 55 60
 Arg Gly Asp Ile Phe Thr Glu Tyr Ile Cys Gln Cys Pro Val Gly Tyr
 65 70 75 80
 Ser Gly Ile His Cys Glu Thr Gly Cys Ser Thr Gln Leu Gly Met Glu
 85 90 95
 Gly Gly Ala Ile Ala Asp Ser Gln Ile Ser Ala Ser Ser Val Tyr Met
 100 105 110
 Gly Phe Met Gly Leu Gln Arg Trp Gly Pro Glu Leu Ala Arg Leu Tyr
 115 120 125
 Arg Thr Gly Ile Val Asn Ala Trp Thr Ala Ser Asn Tyr Asp Ser Lys
 130 135 140
 Pro Trp Ile Gln Val Asn Leu Leu Arg Lys Met Arg Val Ser Gly Val
 145 150 155 160

Met Thr Gln Gly Ala Ser Arg Ala Gly Arg Ala Glu Tyr Leu Lys Thr
 165 170 175

Phe Lys Val Ala Tyr Ser Leu Asp Gly Arg Lys Phe Glu Phe Ile Gln
 180 185 190

Asp Glu Ser Gly Gly Asp Lys Glu Phe Leu Gly Asn Leu Asp Asn Asn
 195 200 205

Ser Leu Lys Val Asn Met Phe Asn Pro Thr Leu Glu Ala Gln Tyr Ile
 210 215 220

Arg Leu Tyr Pro Val Ser Cys His Arg Gly Cys Thr Leu Arg Phe Glu
 225 230 235 240

Leu Leu Gly Cys

<210> 5
 <211> 365
 <212> PRT
 <213> artificial

<220>
 <223> ECC - recombinant protein

<400> 5

Glu Thr Glu Arg Gly Pro Cys Ser Pro Asn Pro Cys Tyr Asn Asp Ala
 1 5 10 15

Lys Cys Leu Val Thr Leu Asp Thr Gln Arg Gly Asp Ile Phe Thr Glu
 20 25 30

Tyr Ile Cys Gln Cys Pro Val Gly Tyr Ser Gly Ile His Cys Glu Thr
 35 40 45

Gly Cys Ser Thr Gln Leu Gly Met Glu Gly Gly Ala Ile Ala Asp Ser
 50 55 60

Gln Ile Ser Ala Ser Ser Val Tyr Met Gly Phe Met Gly Leu Gln Arg
 65 70 75 80

Trp Gly Pro Glu Leu Ala Arg Leu Tyr Arg Thr Gly Ile Val Asn Ala
 85 90 95

Trp Thr Ala Ser Asn Tyr Asp Ser Lys Pro Trp Ile Gln Val Asn Leu
 100 105 110

Leu Arg Lys Met Arg Val Ser Gly Val Met Thr Gln Gly Ala Ser Arg
 115 120 125

Ala Gly Arg Ala Glu Tyr Leu Lys Thr Phe Lys Val Ala Tyr Ser Leu
 130 135 140

Asp Gly Arg Lys Phe Glu Phe Ile Gln Asp Glu Ser Gly Gly Asp Lys
 145 150 155 160

Glu Phe Leu Gly Asn Leu Asp Asn Asn Ser Leu Lys Val Asn Met Phe
 165 170 175

Asn Pro Thr Leu Glu Ala Gln Tyr Ile Arg Leu Tyr Pro Val Ser Cys
 180 185 190

His Arg Gly Cys Thr Leu Arg Phe Glu Leu Leu Gly Cys Glu Leu His
 195 200 205

Gly Cys Ser Glu Pro Leu Gly Leu Lys Asn Asn Thr Ile Pro Asp Ser
 210 215 220

Gln Met Ser Ala Ser Ser Ser Tyr Lys Thr Trp Asn Leu Arg Ala Phe
 225 230 235 240

Gly Trp Tyr Pro His Leu Gly Arg Leu Asp Asn Gln Gly Lys Ile Asn
 245 250 255

Ala Trp Thr Ala Gln Ser Asn Ser Ala Lys Glu Trp Leu Gln Val Asp
 260 265 270

Leu Gly Thr Gln Arg Gln Val Thr Gly Ile Ile Thr Gln Gly Ala Arg
 275 280 285

Asp Phe Gly His Ile Gln Tyr Val Ala Ser Tyr Lys Val Ala His Ser
 290 295 300

Asp Asp Gly Val Gln Trp Thr Val Tyr Glu Glu Gln Gly Ser Ser Lys
 305 310 315 320

Val Phe Gln Gly Asn Leu Asp Asn Asn Ser His Lys Lys Asn Ile Phe
 325 330 335

Glu Lys Pro Phe Met Ala Arg Tyr Val Arg Val Leu Pro Val Ser Trp
 340 345 350

His Asn Arg Ile Thr Leu Arg Leu Glu Leu Leu Gly Cys
 355 360 365

<210> 6
 <211> 205
 <212> PRT
 <213> artificial

<220>
 <223> EC - recombinant protein

<400> 6

Glu Thr Glu Arg Gly Pro Cys Ser Pro Asn Pro Cys Tyr Asn Asp Ala
 1 5 10 15

Lys Cys Leu Val Thr Leu Asp Thr Gln Arg Gly Asp Ile Phe Thr Glu
 20 25 30

Tyr Ile Cys Gln Cys Pro Val Gly Tyr Ser Gly Ile His Cys Glu Thr
 35 40 45

Gly Cys Ser Thr Gln Leu Gly Met Glu Gly Gly Ala Ile Ala Asp Ser
 50 55 60

Gln Ile Ser Ala Ser Ser Val Tyr Met Gly Phe Met Gly Leu Gln Arg
 65 70 75 80

Trp Gly Pro Glu Leu Ala Arg Leu Tyr Arg Thr Gly Ile Val Asn Ala
 85 90 95

Trp Thr Ala Ser Asn Tyr Asp Ser Lys Pro Trp Ile Gln Val Asn Leu
 100 105 110

Leu Arg Lys Met Arg Val Ser Gly Val Met Thr Gln Gly Ala Ser Arg
 115 120 125

Ala Gly Arg Ala Glu Tyr Leu Lys Thr Phe Lys Val Ala Tyr Ser Leu
 130 135 140

Asp Gly Arg Lys Phe Glu Phe Ile Gln Asp Glu Ser Gly Gly Asp Lys
 145 150 155 160

Glu Phe Leu Gly Asn Leu Asp Asn Asn Ser Leu Lys Val Asn Met Phe
 165 170 175

Asn Pro Thr Leu Glu Ala Gln Tyr Ile Arg Leu Tyr Pro Val Ser Cys
 180 185 190

His Arg Gly Cys Thr Leu Arg Phe Glu Leu Leu Gly Cys
 195 200 205

<210> 7
 <211> 317
 <212> PRT
 <213> artificial

<220>
 <223> CC - recombinant protein

<400> 7

Gly Cys Ser Thr Gln Leu Gly Met Glu Gly Gly Ala Ile Ala Asp Ser
 1 5 10 15

Gln Ile Ser Ala Ser Ser Val Tyr Met Gly Phe Met Gly Leu Gln Arg
 20 25 30

Trp Gly Pro Glu Leu Ala Arg Leu Tyr Arg Thr Gly Ile Val Asn Ala
 35 40 45

Trp Thr Ala Ser Asn Tyr Asp Ser Lys Pro Trp Ile Gln Val Asn Leu
 50 55 60

Leu Arg Lys Met Arg Val Ser Gly Val Met Thr Gln Gly Ala Ser Arg
 65 70 75 80

Ala Gly Arg Ala Glu Tyr Leu Lys Thr Phe Lys Val Ala Tyr Ser Leu
 85 90 95

Asp Gly Arg Lys Phe Glu Phe Ile Gln Asp Glu Ser Gly Gly Asp Lys
 100 105 110

Glu Phe Leu Gly Asn Leu Asp Asn Asn Ser Leu Lys Val Asn Met Phe
 115 120 125

Asn Pro Thr Leu Glu Ala Gln Tyr Ile Arg Leu Tyr Pro Val Ser Cys
 130 135 140

His Arg Gly Cys Thr Leu Arg Phe Glu Leu Leu Gly Cys Glu Leu His
 145 150 155 160

Gly Cys Ser Glu Pro Leu Gly Leu Lys Asn Asn Thr Ile Pro Asp Ser
 165 170 175

Gln Met Ser Ala Ser Ser Ser Tyr Lys Thr Trp Asn Leu Arg Ala Phe
 180 185 190

Gly Trp Tyr Pro His Leu Gly Arg Leu Asp Asn Gln Gly Lys Ile Asn
 195 200 205

Ala Trp Thr Ala Gln Ser Asn Ser Ala Lys Glu Trp Leu Gln Val Asp
 210 215 220

Leu Gly Thr Gln Arg Gln Val Thr Gly Ile Ile Thr Gln Gly Ala Arg
 225 230 235 240

Asp Phe Gly His Ile Gln Tyr Val Ala Ser Tyr Lys Val Ala His Ser
 245 250 255

Asp Asp Gly Val Gln Trp Thr Val Tyr Glu Glu Gln Gly Ser Ser Lys
 260 265 270

Val Phe Gln Gly Asn Leu Asp Asn Asn Ser His Lys Lys Asn Ile Phe
 275 280 285

Glu Lys Pro Phe Met Ala Arg Tyr Val Arg Val Leu Pro Val Ser Trp
 290 295 300

His Asn Arg Ile Thr Leu Arg Leu Glu Leu Leu Gly Cys
 305 310 315

<210> 8
 <211> 25
 <212> DNA
 <213> artificial sequence

<220>
 <223> primer sequence

<400> 8
 cctcaggctg aggactggca gcggc

25

<210> 9
 <211> 26
 <212> DNA
 <213> artificial sequence

<220>
 <223> primer sequence

<400> 9
 gctgtcaccg ggtgtccagg gtcacc

26